

WHAT IS CLAIMED IS:

1. A method of revoking a device, the method comprising:
 - receiving a certificate from the device, the certificate including one or more of fields, at least one of the fields holding a signature;
 - attempting to verify the signature;
 - receiving a revocation list from a source, the revocation list identifying one or more data on the certificate as valid or invalid, the data including at least one of the fields of the certificate; and
 - if one of one or more signatures identified unsuccessfully verified and one or more data is identified as invalid, preventing the transmission of a session key to the device, the session key being required to establish a secure communication channel.
2. The method of claim 1 wherein the revocation list is evaluated upon file access.
3. The method of claim 2 wherein the revocation list is stored upon file creation.
4. The method of claim 1 wherein each file has one revocation list, a plurality of files with a plurality of revocation lists having duplicative entries.
5. The method of claim 4 wherein the duplicative entries among a plurality of revocation lists are limited by centrally storing the details and providing each file with a list of identifiers or pointers that reference a location of complete details regarding revocation information.
6. The method of claim 5 wherein the revocation information may be stored by revocation nodes and the revocation list associated with a file may be stored as a list of revocation node identifiers.
7. The method of claim 6 wherein each revocation node consists of a list of clauses and a rule for combining the clauses for determining the evaluation for the node.
8. The method of claim 7 wherein the revocation results are finalized by one of get play key, play, record, copy, open, close, create, get metadata and set metadata.

1 9. The method of claim 1 wherein the revocation list is stored on media along with the
2 file.

1 10. The method of claim 1 wherein the revocation list is copied onto each device.

1 11. The method of claim 1 wherein the revocation list is maintained by a server such that
2 content rendering devices communicating with a server receive updated revocation lists
3 directly to the device.

1 12. The method of claim 1 wherein a plurality of revocation lists are stored on media on a
2 file-by-file basis, such that one or more files on the media may have a revocation list
3 associated with the file.

1 13. The method of claim 12 wherein the revocation list is accessed during one of a file
2 access process and a combination of both an authentication and a file access process.

1 14. The method of claim 1 wherein the revocation list includes a poison pill that prevents
2 a content rendering device from operating.

1 15. The method of claim 1 wherein the revocation list is updated when the content
2 rendering device is connected to a server.

1 16. The method of claim 1 wherein revocation of a content rendering device includes at
2 least revocation of one or more public keys, the revocation of a public key revoking any
3 corresponding signature.

1 17. The method of claim 1 wherein the revocation list is maintained as an object within
2 the file system on the media with a distinct handle.

1 18. The method of claim 1 wherein the revocation information is centrally located.

1 19. The method of claim 1 wherein the source is one of a portable medium and firmware.

1 20. The method of claim 1 wherein the information as to whether certificates and/or
2 public keys have been revoked is stamped on the media.

1 21. The method of claim 1 wherein the device is one of an engine, a component that
2 embeds an engine, a third party digital rights management protocol, an application
3 running in an open computing environment, and a clearinghouse server, the certificate
4 identifying one or more secure application programming interfaces (APIs) for which an
5 application operable with the device may have access.

1 22. The method of claim 1 wherein the certificate is signed by a private key assigned
2 according to a class of device, the class of device including engines, components
3 embedding an engine with no external digital input/output port, components embedding
4 an engine with digital input/output ports, and host applications not embedding an engine.

1 23. The method of claim 1 wherein the data in the certificate specifies one or more of a
2 product category, a product line, a model, a revision and a serial number of the device.

1 24. The method of claim 23 wherein source validation data is compared with the data on
2 the certificate to identify as invalid one or more of the product category, the product line,
3 the model, the revision and the serial number of the host.

1 25. The method of claim 24 wherein the certificate includes one or more of the following
2 fields: certifying authority identifier, version, certifying authority public key, certifying
3 authority public key identifier, exposed methods, company, model identifier, revision,
4 metadata identifier, host signature public key, certifying authority signature, serial
5 number, protocol key and host signature, wherein the certifying authority signature
6 verifies one or more of the fields in the certificate and the host signature verifies one or
7 more of the fields in the certificate.

1 26. The method of claim 1 wherein the certificate enables an entity receiving the
2 certificate to control quality of the device by invalidating devices that are false or have
3 latent defects.

1 27. The method of claim 25 wherein the certificate further includes fields provided by a
2 device manufacturer, including the device public key, wherein the device public key is
3 signed by a private key.

1 28. The method of claim 25 wherein one or more of the product category, the product
2 line, the model, the revision and the serial number of the host are provided to a certificate
3 creator after the host passes a qualification procedure.

1 29. The method of claim 1 wherein the certificate specifies one or more certificate
2 classes, the certificate classes providing a set of methods that may be exposed after the
3 transmitting the session key.

1 30. The method of claim 29 wherein the set of methods includes digital rights
2 management (DRM) methods, copy, record, play, read secure metadata, write secure
3 metadata, and unlock, the methods operable according to a type of the device.

1 31. The method of claim 30 wherein:
2 the unlock method is associated with a clearinghouse server;
3 the copy method is associated with one of an engine and a first DRM application
4 operable with a second DRM application; and
5 the import method is associated with one or more of a player, a mastering tool, a
6 kiosk, and a clearinghouse server.

1 32. The method of claim 1 wherein each of the fields hold 326-bit values for 163-bit
2 elliptic curve cryptography.

1 33. An apparatus for revoking a host, the apparatus comprising:
2 means for receiving a certificate from a host, the certificate including a plurality of
3 fields including a field holding a protocol public key signed by a certifying
4 authority;
5 means for verifying signatures on the certificate, the verifying including:
6 verifying the certifying authority signature using the protocol public key; and
7 verifying a host signature using a host public key on the certificate; and
8 means for receiving validation data from a source, the validation data identifying one
9 or more data on the certificate as valid or invalid according to a revocation list;
10 and
11 means for preventing the transmission of a session key to the host to establish a secure
12 communication channel if the signatures are invalid.

- 1 34. An engine configured to revoke a host, the engine comprising:
2 a block configured to receive a certificate from a host, the certificate including a
3 plurality of fields including a field holding a protocol public key signed by a
4 certifying authority;
5 a block configured to verify signatures on the certificate, the verifying including:
6 verifying the certifying authority signature using the protocol public key; and
7 verifying a host signature using a host public key on the certificate; and
8 a block configured to receive validation data from a source, the validation data
9 identifying one or more data on the certificate as valid or invalid according to
10 a revocation list; and
11 a block configured to preventing the transmission of a session key to the host to
12 establish a secure communication channel if the signatures are invalid.
- 1 35. A computer program product, the computer program product comprising:
2 signal bearing media bearing digital information adapted to be operable with a
3 firmware), the digital information including programming including:
4 a block configured to receive a certificate from a host, the certificate including
5 a plurality of fields including a field holding a protocol public key signed
6 by a certifying authority;
7 a block configured to verify signatures on the certificate, the verifying
8 including:
9 verifying the certifying authority signature using the protocol public key; and
10 verifying a host signature using a host public key on the certificate; and
11 a block configured to receive validation data from a source, the validation data
12 identifying one or more data on the certificate as valid or invalid according
13 to a revocation list; and
14 a block configured to preventing the transmission of a session key to the host to
15 establish a secure communication channel if the signatures are invalid.